UNIVERSITY of WASHINGTON

FIRST ANNUAL NATIONAL SCIENCE FOUNDATION SMART & CONNECTED COMMUNITIES PRINCIPAL INVESTIGATORS' MEETING

March 26–27, 2018

KANSAS CITY CONVENTION CENTER
Kansas City, Missouri

https://nsfsccpimeeting.ee.washington.edu/

FIRST ANNUAL NATIONAL SCIENCE FOUNDATION SMART & CONNECTED COMMUNITIES PRINCIPAL INVESTIGATORS' MEETING

March 26–27, 2018

KANSAS CITY CONVENTION CENTER
Kansas City, Missouri

https://nsfsccpimeeting.ee.washington.edu/
(The full proceedings of the meeting are available for download from the website.)

PLANNING COMMITTEE

Radha Poovendran (Professor and Chair, University of Washington)
David Corman (National Science Foundation)
Andrew Clark (Assistant Professor, Worcester Polytechnic Institute)
Tho Nguyen (Senior Scientist, University of Virginia)
Sertac Karaman (Associate Professor, Massachusetts Institute of Technology)
Lillian Ratliff (Assistant Professor, University of Washington)

WELCOME

Welcome to the first Smart and Connected Communities (S&CC) Principal Investigator Meeting. We are truly excited to see all of our S&CC grantees and hear about the great progress that has been made since the program commenced last year.

This PI meeting is unique in that our PI community will also be able to participate in the Smart Cities Connect Conference with which we are co-located. This opens up opportunities for networking and the creation of new and valuable community engagements.

We have an outstanding program planned for you including two thought provoking keynotes. The first keynote is by Professor Peter Norton who will discuss the importance of preserving a sense of community in the presence of development and technological or social change and disruption. The second keynote is by Brenna Berman who will reflect on her vision of smart cities from the perspective of a former Commissioner for the Department of Innovation and Technology for Chicago and new leadership position at City Tech Collaborative.

We will hear roughly forty lightning talks of various lengths from our ongoing S&CC projects. These will help frame the state of S&CC research. Importantly, many of these projects have brought community partners to the meeting and will able to demonstrate the new perspective that community engagement brings to integrative research.

Our program also includes a number of panels featuring researchers and community partners from Planning Grants, Research Coordination Networks, and our Integrative Research Grants. These panels cover many different themes and will help us understand the challenges and opportunities in building integrative research, growing community engagement, and sustaining projects within a community.

Drs. David Kuehn and Anthony Thomas from Department of Transportation have also sponsored a workshop within the PI meeting on Smart Infrastructure. Smart infrastructure is intended to do more than simply sense and report data. It represents a next generation of infrastructure that can actively close the loop in response to a disturbance.

We are pleased to welcome many other Federal Agencies who are participating in this PI Meeting. In particular, Drs. Matt Dalbey and John Thomas from Environmental Protection Agency are leading a session on rebuilding Sustainable Economies with focus on data, place, and process. We also are joined by Jean Rice from National Telecommunications and Information Administration and William “Aldo” Kusmik from Intelligence Advanced Research Projects Activity (IARPA).

Thanks to all who have helped make this PI meeting a reality including our PI Meeting Organizing Committee led by Drs. Radha Poovendran, Lillian Ratliff, Andrew Clark, Sertac Karaman, Tho Nguyen, and the UW Events experts Pam Eisenheim, Chris Wallish and Lindsay Appesland. Thanks also to Dr. Meghan Houghton for her efforts in coordinating this PI meeting with the US Ignite Smart Cities Connect Program. Finally, great thanks to the rest of the S&CC NSF team and especially to Dr. Michal Ziv-El who has played an indispensable role in making this come together.

David Corman
Program Director, NSF

AGENDA

MONDAY, MARCH 26TH, 2018

7:15–8:00 a.m. | Breakfast and Registration

8:00–8:15 a.m. | Welcome
Radha Poovendran, Professor and Chair, University of Washington
Ken Calvert, Division Director, NSF, CISE/Computer Network Systems

8:15–8:30 a.m. | NSF Insights into S&CC program
David Corman, Program Director, NSF

8:30–9:15 a.m. | Keynote by Peter Norton, Professor, University of Virginia — "Data Don't Drive: Values, History, and Connecting Communities"
Introduction: Ryan Locicero, AAAS Fellow at NSF

As experts, we pride ourselves on our "data-driven" solutions, but ultimately data drive nothing. They guide. Like compass readings, data are indispensable to us as we seek our destination, but they cannot tell us what the destination is. It is tempting to look to data to absolve us of our responsibility to make difficult judgments, but ultimately, we cannot escape this responsibility, and a history we know too little demonstrates the dangers of trying to do so. Indeed, much of our collective effort is to repair the damage our predecessors, with good data and good intentions, committed. We must study the lessons of this history if we are not to repeat these errors. Above all we must reckon with social values, which resist quantification. Humans best express values through stories. Even as experts, therefore, we must develop not only data collection and data analysis skills, but also storytelling and story-listening skills. Such skills will help us better serve the communities we aspire to serve, and help us avoid the costly mistakes that have eroded trust in experts.

9:15–10:10 a.m. | Research Lightning Talks: IRGs Track 1 and Track 2
Moderator: Meghan Houghton, Staff Associate, NSF

- "SCC-IRG Track 1: Connecting the Smart-City Paradigm with a Sustainable Urban Infrastructure Systems Framework to Advance Equity in Communities" — Shashi Shekhar, University of Minnesota-Twin Cities (1737633)

- "SCC-IRG Track 1: Overcoming Social and Technical Barriers for the Broad Adoption of Smart Stormwater Systems" — Branko Kerkez, University of Michigan Ann Arbor (1737432)
- "SCC-IRG Track 1: Sociotechnical Systems to Enable Smart and Connected Energy-Aware Residential Communities" — Panagiota Karava, Purdue University (1737591)
- "SCC-IRG Track 2: A Novel Architecture for Secure, Energy-Efficient Community-Edge-Clouds with Application in Harlem" — Daniel Kilper, University of Arizona (1737453)
- "SCC-IRG Track 2: Community on Multimodality: Participatory Action, Service, and Support (COMPASS)" — Daphney-Stavrou Zois, SUNY at Albany (1737443)
- "SCC-IRG Track 2: Data-Informed Modeling and Correct-by-Design Control Protocols for Personal Mobility in Intelligent Urban Transportation Systems" — Lillian Ratliff, University of Washington (1736582)
- "SCC-IRG Track 2: Real-Time Algorithms and Software Systems for Heterogeneous Data Driven Policing of Social Harm" — George Mohler, Indiana University (1737585)
- "SCC-IRG Track 2: Resilient Water Systems: Integrating Environmental Sensor Networks and Real-Time Forecasting to Adaptively Manage Drinking Water Quality and Build Social Trust" — Cayelan Carey, Virginia Tech (1737424)
- "SCC-IRG Track 2: Smart & Connected Kids for Sustainable Energy Communities" — Hilary Boudet, Oregon State University (1737565)
- "SCC-IRG Track 2: Towards Quality Aware Crowdsourced Road Sensing for Smart Cities" — Lu Su, SUNY at Buffalo (1737590)
- "CPS: TTP Option: Medium: Building a Smart City Economy and Information Ecosystem to Motivate Pro-Social Transportation Behavior" — Alexandros Labrinidis, University of Pittsburgh (1739413)

10:10–10:25 a.m. | Break

10:25–11:10 a.m. | Panel with subset of Track 1 and Track 2 PIs and community partners

Panel Moderator: David Corman, Program Director, NSF

Panelists:

- Dan Kilper, Research Professor, University of Arizona
- Clayton Banks, Chief Executive Officer, Silicon Harlem
- Shashi Shekhar, Professor, University of Minnesota
- Brette Hjelle, Director of Business Administration, City of Minneapolis
- Carey Cayelan, Assistant Professor, Virginia Tech
- Lillian Ratliff, Assistant Professor, University of Washington

This panel will address questions such as:

- What was their greatest challenge in the first year, and what do you think is going to be your major challenge in the second year?
- Have you been surprised by outcomes stemming from the integration of social and technical dimensions in your research?
- How are you interacting with your community partner(s) and have your interactions with the community changed from what you expected?
- What is the most important thing for the S&CC program to consider as it moves forward?

It will also provide insight into what makes a successful IRG project.

11:10 a.m.–12:00 p.m. | Research Lightning Talks: Planning Grants

Moderator: Sunil Narumalani, Program Director, NSF

- "SCC-Planning: Building Capacity for Smart and Connected Management of Thermal Extremes" — Paul Coseo, Arizona State University (1737617)
- "SCC-Planning: Agent-based Scenario Planning for a Smart & Connected Community against Sea Level Rise in Tampa Bay" — Yasin Yilmaz, University of South Florida (1737598)
- "SCC-Planning: Building Resilient Coastal Cities through Smart and Connected Communities" — Nancy Grimm, Arizona State University (1737626)
- "SCC-Planning: Caution: Heavy Load Ahead" — Kris Wernstedt, Virginia Tech (1737492)

- “SCC-Planning: CityGuide: Beacon-Based Community-Driven Inclusive Wayfinding” — Vinod Namboodiri, Wichita State University (1737433)
- “SCC-Planning: Community Energy: Technical and Social Challenges and Integrative Solutions” — Jason Dedrick, Syracuse University (1737550)
- “SCC-Planning: Defining Research and Education Challenges in IoT for Neighborhoods with Significant Numbers of Small-to-Mid-Sized Manufacturers” — Robert Gao, Case Western Reserve University (1737612)
- “SCC-Planning: Developing a Sensor-driven, Citizen Science Approach to Hazard Detection and Warning in Rural Communities” — Ryan Brown, Rand Corporation (1737035)
- “SCC-Planning: Enhancing Water Resource Management and Infrastructure Improvement through Sensing, Computation, and Community Engagement” — Fang Jin, Texas Tech University (1737634)
- “SCC-Planning: How Can Investments In Smart Cities Technologies Improve The Lives Of Low-Income, Inner-City Residents” — Gerrit Knaap, University of Maryland College Park (1737495)
- “SCC-Planning: Plan an Integrated Active Travel and Green Infrastructure System for Mental Wellbeing in Disadvantaged Communities through Crowdsourcing Technology” — Hongwei Dong, California State University-Fresno (1737380)
- “SCC-Planning: Promoting Smart Technologies in Public Safety and Transportation to Improve Social and Economic Outcomes in a US EDA-Designated Critical Manufacturing Region” — Seung-Jong Park, Louisiana State University (1737557)
- “SCC-Planning: Smart & Connected Rural Communities” — Cajetan Akujuobi, Prairie View A & M University (1737592)
- “SCC-Planning: Smart and Connected Residential Water Quality Community” — Vinka Craver, University of Rhode Island (1737514)
- “SCC-Planning: Towards Smart and Accessible Transportation Hub - Research Capacity Building and Community Engagement” — Zhigang Zhu, CUNY City College (1737533)
- “SCC-Planning: Using Innovations in Big Data and Technology to Address the High Rate of Infant Mortality in Greater Columbus Ohio” — Raghu Machiraju, Ohio State University (1737560)
- “SCC-Planning: A Data-Driven Framework for Smart Decision-Making in Small and Shrinking Communities” — Kimberly Zarecor, Iowa State University (1736718)

- "SCC-Planning: Coordinated Autonomous Operation of UAVs in Urban First Responder Scenarios" — Christian Poellabauer, University of Notre Dame (1737496)
- "SCC-Planning: Designing an Integrated Mobile Application and Case Management Tool to Promote Behavioral Change in Criminal Populations Supervised in the Community" — April Pattavina, University of Massachusetts Lowell (1737583)
- "SCC-Planning: Pedestrian Safe and Secure Communities with Ambient Machine Vision" — Hamed Tabkhi, University of North Carolina at Charlotte (1737586)
- "SCC-Planning: Smart, Connected, Engaged Senior Communities" — Teresa Wu, Arizona State University (1737454)
- "SCC-Planning: Urbanism Next Network Planning Grant" — Nicolas Larco, University of Oregon Eugene (1737645)
- "SCC-Planning: vSmart Connections for for Conserving and Catalyzing Cultural Community Resources" — Donna Rizzo, University of Vermont (1737587)
- "SCC-Planning: ZER0H: Zero Energy Ready Homes" — Rajesh Kavasseri, North Dakota State University Fargo (1737538)
- "PIRE: Science of Design for Societal-Scale Cyber-Physical Systems" — Janos Sztipanovits, Vanderbilt University (1743772)

12:00–1:00 p.m. | Lunch Keynote by Brenna Berman, Executive Director, City Tech Collaborative — "Creating Sustainable Innovation through Collaboration"

Introduction: Radha Poovendran, Professor and Chair, University of Washington

Cities present a complex context for innovation and problem solving. Perhaps nowhere is innovation more imperative or more difficult. To address the challenges of sustained innovation, collaboration across organizations is mandatory. This presentation will explore the models, challenges, and approaches that can support successful collaboration and sustained innovation in cities, towns, and communities.

1:00–1:30 p.m. | Research Lightning Talks: Research Coordination Networks (RCN)

Moderator: Andrew Clark, Assistant Professor, Worcester Polytechnic Institute

- "SCC-RCN: Developing an Informational Infrastructure for Building Smart Regional Foodsheds" — Thomas Tomich, University of California-Davis (1737573)

- "SCC-RCN: One Bridge at a Time: Bridging the Digital Divide for the Well-Being of Aging Populations in Smart and Connected Communities" — Mustafa Anil Yazici, SUNY at Stony Brook (1737483)
- "SCC-RCN: Polycentric Development Toward the Vision of 21st Century Main Street in Virginia" — Ila Berman, University of Virginia (1737581)
- "SCC-RCN: Smart Civic Engagement in Rapidly Urbanizing Regions" — Ross Meentemeyer, North Carolina State University (1737563)
- "SCC-RCN:MOHERE: Mobility, Health, and Resilience in SCC: Building Capacities and Expanding Impact" — Radha Poovendran, University of Washington (1736596)

1:30–2:15 p.m. Panel with subset of RCN and PG PIs and community partners

Panel Moderator: Sylvia Spengler, Program Director, NSF

Panelists:

- Kimberly Zarecor; Associate Professor, Iowa State University
- Erin Mullenix, Research Director, Iowa League of Cities
- Ryan Brown, Senior Researcher, RAND Corporation
- Lisa Busch, Executive Director, Sitka Sound Science Center
- Radha Poovendran, Professor and Chair, University of Washington
- Thomas Tomich, Professor, University of California-Davis

This panel will address questions such as:

- How is your PG achieving its aims?
- Is the one year and $100K sufficient to build / complete the community engagement and integrative research concept?
- Can you describe your community engagement activities to date?
- As an RCN, what are the critical milestones? What are the start-up activities? How have you interacted with your other research collaborators? How have you engaged with community partners?
- Are there international activities included in your RCN?

2:15–2:30 p.m. | Break

2:30–3:45 p.m. | DoT Smart Infrastructure Session

Introduction: Cynthia Chen, Program Director, NSF

Session leads:
David Kuehn, Program Manager, Department of Transportation
Anthony Thomas, Technology Policy Analyst, Department of Transportation
Additional Participants:

- Simon Laflamme, Associate Professor, Iowa State University
- Evgueni Filipov, Assistant Professor, University of Michigan
- Sigrid Adriaenssens, Associate Professor, Princeton University
- Ashley Thrall, Associate Professor, Notre Dame University
- Shirley Dyke, Professor, Purdue University

With advances in design, sensing, communications, analytics, and control technologies, there is a new potential blending between what is possible in computational simulation and the physical world for transportation infrastructure. Imagine a future where structural elements and pavements can form, reform, and change shape in reaction to the environment. Mechanical and cyber elements become intertwined as software systems are embedded in physical objects such as pavements, earthworks, and structures providing the equivalent of a nervous system, self-sensing and automated control in response to changing requirements. Picture bridge piers that can reorient to changes in the flow or water. Structural bearings and tendons that can change tension in response to sudden changes in wind, seismic shaking, or vehicle loading. Flooded pavements that can create new drainage flows to remove standing water to assist vehicle traction. The concept of active highway infrastructure is facing a century of civil engineering training and practice to build passive infrastructure that you can leave untouched and unchanging for as long as practical. Accordingly, it will take more than new technology to take advantage of control in highway infrastructure. It will take vision. The objective of this workshop at the Smart and Connected Communities meeting is to brainstorm the potential of applications for active transportation infrastructure, an initial step in building a vision that can challenge and reframe how engineers design and manage transportation infrastructure.

3:45–4:00 p.m. | Break

4:00–5:00 p.m. | Going Beyond Prototypes

Panel Moderator: Lillian Ratliff, Assistant Professor, University of Washington

Speakers:

- Jonathan Sprinkle, Program Director, NSF
- Juan Bello, Associate Professor, New York University
- Micah Kotch, Managing Director, Urban-X
- George Mohler, Associate Professor, Indiana University – Purdue University Indianapolis
- Daniel Palmer, Start Up In Residence, City Innovate

This session will provide PIs with tangible strategies for developing their technologies/solutions in a way that is able to be implemented and self-sustaining beyond the life of the NSF grant. Panelists will cover examples of entrepreneurial training opportunities for researchers (NSF I-Corps, Urban-X Accelerator Program, and Start-up In Residence) and will hear from a PI with a start-up serving municipalities. Discussion topics for the panel will include technology acquisition in cities, barriers to entry, timeline, funding opportunities, and the process of transitioning technology from the lab to practice. The discussion will also identify challenges and solutions for going beyond prototypes.

5:00–5:05 p.m. | Cloud considerations for S&CC Research

Sanjay Padhi, Amazon Web Services

5:05–5:10 p.m. | First day wrap-up

Radha Poovendran, Professor and Chair, University of Washington

5:45–7:15 p.m. | Networking Event

Yard House
1300 Main Street
Kansas City, MO 64105
https://www.yardhouse.com/home

AGENDA

TUESDAY, MARCH 27TH, 2018

8:30 a.m.–12:00 p.m. | Plenary session with S&CC Conference and Expo and US Ignite Application Summit

12:00–1:00 p.m. | Lunch on your own

1:00–1:05 p.m. | Welcome Day 2
Jim Kurose, Assistant Director, Computer and Information Science and Engineering (CISE), NSF

1:05–2:20 p.m. | Re-Building Sustainable Economies: Data, Place and Process
Introduction: Meghan Houghton, NSF

Session Leads:
Matt Dalbey, Director, US Environmental Protection Agency, Office of Sustainable Communities
John Thomas, Acting Associate Director, US Environmental Protection Agency, Office of Sustainable Communities

EPA's Office of Sustainable Communities has worked in more than 600 communities over the past decade, providing technical assistance that helps local leaders develop and implement strategies to revitalize neighborhoods, redevelop vacant land, improve transportation options, and better manage stormwater. In this interactive session, Matt Dalbey and John Thomas will discuss the lessons learned from EPA's technical assistance programs and the implications for researchers developing tools for smart and connected communities. In particular, planning and analytical tools have traditionally focused on supporting more informed decisions, but increasingly there is a need for such tools to foster stakeholder engagement and help build local capacity to re-envision the future of neighborhoods, cities and regions.

2:20–2:35 p.m. | Break

2:35–3:50 p.m. | Growing and Sustaining the Research Ecosystem for Smart and Connected Communities

Panel Moderator: Michal Ziv-El, AAAS Fellow at NSF

Participants:

- Katharine Lusk, Executive Director, Initiative on Cities, Boston University
- Will Barkis, Volunteer Technology Advisor, San Francisco Mayor's Office of Civic Innovation
- Kamran Saddique, Executive Director, City Innovate Foundation
- Lindsey Frost Dodson, Program Director, Mozilla Foundation
- Ken Calvert, Division Director, Computer and Network Systems, NSF/CISE
- Lasse Bundgaard, Industrial PhD Candidate, Copenhagen Business School

This panel will explore opportunities for academic researchers and community partners to strengthen the research ecosystem for smart and connected communities in their universities, cities, and towns. Panelists will cover a broad range of perspectives: the university, mayor's office, and foundations that are working at the intersection of the city and innovators, entrepreneurs, or industry. Discussion will include the role of researchers in helping to translate successes in smart community innovations to other cities or town, how to embed researchers in the process of testing and scaling smart community technologies, and opportunities for workforce development. It will also highlight NSF's Platforms for Advanced Wireless Research program and discuss the value of and access to testbeds and living labs nationally and internationally.

3:50–3:55 p.m. | Concluding remarks for PI meeting

David Corman, Program Director, NSF.

4:00–7:00 p.m. | Poster and demo session at Expo Hall; open to attendees of the S&CC Conference and Expo and US Ignite Application Summit

KEYNOTE SPEAKERS

Peter Norton

Associate professor of history in the Department of Engineering and Society at the University of Virginia

Peter Norton is associate professor of history in the Department of Engineering and Society at the University of Virginia (USA). He is the author of Fighting Traffic: The Dawn of the Motor Age in the American City (MIT Press). His article "Street Rivals: Jaywalking and the Invention of the Motor Age Street," published in Technology and Culture, won the Abbott Payson Usher Prize of the Society for the History of Technology. He is a frequent speaker to audiences of transportation professionals, planners, and mobility advocates. He is a member of the University of Virginia's Center for Transportation Studies and of the Sustainable Urban Mobility project of Technical University Eindhoven (Netherlands). Norton teaches classes in history of technology and in technology and society. He is a winner of the Hartfield-Jefferson Scholars Teaching Prize and of the Trigon Engineering Society's Hutchinson Award "for dedication and excellence in teaching."

Brenna Berman

Executive Director of the City Tech Collaborative

Brenna Berman serves as Executive Director of the City Tech Collaborative, an IoT urban infrastructure lab that transforms cities into testbeds for new ideas. City Tech remakes essential services and infrastructure, from skills to skyscrapers and expands those solutions to other cities, thus increasing the world's odds of solving big, urban problems. City Tech is currently easing subway congestion during large events; creating a digital map of Chicago's underground; and launching a digital directory of public health services in Chicago.

Prior to joining City Tech, Brenna served in Chicago Mayor Rahm Emanuel's administration, which she joined in 2011. She served as the Chief Information Officer for the City and Commissioner for the Department of Innovation & Technology (DoIT) from 2012 to spring of 2017. In that time, she focused on transforming the team at DoIT to provide the skills and expertise to implement the Mayor's vision of data-driven resident services and of a more efficient, effective, and innovative City government.

Radha Poovendran

Professor and Chair, University of Washington

Radha Poovendran is a professor and chair of the department of electrical engineering at the University of Washington since 2000. He is a founding director of the Network Security Lab at the University of Washington (NSL@UW). His research areas are wireless security and cyber-physical systems security. He is a recipient of the NSA Rising Star Award (1999), NSF CAREER award (2001), ARO YIP (2002), ONR YIP (2004), PECASE (2005), Kavli Faculty Fellow of the National Academy of Sciences (2007). He is a recipient of the UW EE Outstanding Teaching Award (2002) and Outstanding Research Award (2002). He is recipient of the Graduate Mentor Award (2006) from the Office of the Chancellor of the University of California, San Diego. He is a co-author of multiple best paper awards, including 2010 IEEE/IFIP William C. Carter Award winning paper. He is a co-author of "Submodularity in Dynamics and Control of Networked Systems." He is a fellow of the IEEE for contributions to security of Cyber-Physical Systems. He received a Distinguished Alumni Award of the ECE department of the University of Maryland in 2016. He served as PI for the first National Visioning Workshop for Smart & Connected Cities in January 2016.

Andrew Clark

Assistant Professor, Worcester Polytechnic Institute

Andrew Clark is an Assistant Professor in the Department of Electrical and Computer Engineering at Worcester Polytechnic Institute. He received his Ph.D. from the Network Security Lab (NSL), Department of Electrical Engineering, at the University of Washington in 2014. He is author or co-author of the IEEE/IFIP William C. Carter award-winning paper (2010), the WiOpt Best Paper (2012), and the WiOpt Student Best Paper (2014), and was a finalist for the IEEE CDC 2012 Best Student-Paper Award. He received the NSF CRII award in 2017. His research interests are in control and security of cyber-physical systems.

Tho Nguyen

Senior Scientist, University of Virginia

Tho Nguyen is a computer scientist at the University of Virginia (UVA). He holds an appointment in the Office of the Vice-President for Information Technology, where he manages UVA's flagship ACCORD Advanced Cyberinstrument Program. ACCORD includes a consortium of eleven Virginia public research universities collaborating to deploy next generation advanced research computing infrastructure across the State. In addition to his appointment in the VP for IT Office, Tho is concurrently a Senior Research Program Officer in the Department of Computer Science where he is primarily responsible for project and program development in Cyber-Physical Systems and Software/Hardware Systems Research. Tho earned his Ph.D. from the Department of Electrical Engineering (Systems, Controls & Robotics), at the University of Washington, Seattle in 2009. Prior to joining UVA, Tho served as a Science and Technology Policy Fellow with the American Association for the Advancement of Science (AAAS) and was appointed to the National Science Foundation, where he worked on the Cyber-Physical Systems Program (2013-2015). He is also a J. William Fulbright Fellow to Vietnam (2006-2007).

Lillian Ratliff

Assistant Professor, University of Washington

Lillian Ratliff was a postdoctoral researcher in electrical engineering and computer sciences at the University of California, Berkeley from 2015 to 2016, where she obtained her Ph.D. in 2015. Her research interests lie at the intersection of game theory, optimization and statistical learning. Ratliff applies tools from these domains to address inefficiencies and vulnerabilities in next-generation urban infrastructure systems. She is the recipient of a National Science Foundation Graduate Research Fellowship and she received the NSF CRII award in 2017.

Sertac Karaman

Associate Professor, Massachusetts Institute of Technology

Sertac Karaman is an Associate Professor of Aeronautics and Astronautics at the Massachusetts Institute of Technology. He has obtained B.S. degrees in mechanical engineering and in computer engineering from the Istanbul Technical University, Turkey, in 2007; an S.M. degree in mechanical engineering from MIT in 2009; and a Ph.D. degree in electrical engineering and computer science also from MIT in 2012. His research interests lie in the broad areas of robotics and control theory. In particular, he studies the applications of probability theory, stochastic processes, stochastic geometry, formal methods, and optimization for the design and analysis of high-performance cyber-physical systems. The application areas of his research include driverless cars, unmanned aerial vehicles, distributed aerial surveillance systems, air traffic control, certification and verification of control systems software, and many others. He is the recipient of an IEEE Robotics and Automation Society Early Career Award in 2017, an Office of Naval Research Young Investigator Award in 2017, Army Research Office Young Investigator Award in 2015, National Science Foundation Faculty Career Development (CAREER) Award in 2014, AIAA Wright Brothers Graduate Award in 2012, and an NVIDIA Fellowship in 2011.

David Corman

Program Director — Cyber-Physical Systems and Smart & Connected Communities Programs

Dr. David Corman is the lead Program Director for Cyber Physical Systems (CPS) and Smart and Connected Communities (SCC) Programs at the National Science Foundation. The CPS program is a cross-disciplinary and interagency program. The CPS program also includes the following as agency partners: 1) Department of Homeland Security – Cyber Security Division; 2) NASA; 3) National Institute of Food and Agriculture; 4) National Institutes of Health; and 5) Federal Highway Administration.

The S&CC program was started by NSF in 2016. The goal of the program is to accelerate the creation of the scientific and engineering foundations that will enable smart and connected communities to bring about new levels of economic opportunity and growth, safety and security, health and wellness, and overall quality of life. S&CC is multi-directorate including CISE, EHR, ENG, GEO, and SBE.

Dr. Corman joined NSF in 2013. He has held appointments at the University of Maryland College Park, and at Washington University – St. Louis. Dr. Corman obtained a dual BS degree in System Science and Mathematics and Applied Mathematics and Computer Science from Washington University. He then obtained a dual MS degree in SSM and Mechanical Engineering from Washington University. He completed his graduate education at the University of Maryland – College Park and obtained a PhD in Electrical Engineering with a major in controls and minor in communications and applied mechanics.

Ken Calvert

Division Director — Computer and Network Systems

Ken Calvert is the Division Director for Computer and Network Systems in the Computer and Information Science and Engineering (CISE) Directorate at the National Science Foundation. He is there on temporary assignment (since May, 2016) from the University of Kentucky, where he is Gartner Group Professor in Network Engineering and former Chair of the Department of Computer Science. He has made contributions in various areas including network topology modeling, active/programmable networks, and future Internet architecture. He received his Ph.D. in computer science from the University of Texas at Austin. He holds a Masters in computer science from Stanford University and a Bachelors in computer science and engineering from the Massachusetts Institute of Technology. Prior to his appointment at the University of Kentucky, he was a Member of the Technical Staff at Bell Laboratories in Holmdel, NJ, and served on the faculty in the College of Computing at the Georgia Institute of Technology. He is an IEEE Fellow and a member of the ACM.

Dr. Jim Kurose

Assistant Director of the National Science Foundation

Dr. Jim Kurose is an Assistant Director of the National Science Foundation (NSF), where he leads the Directorate for Computer and Information Science and Engineering (CISE). Dr. Kurose is on leave from the University of Massachusetts, Amherst, where he is a Distinguished Professor in the College of Information and Computer Sciences. His research interests include network protocols and architecture, network measurement, sensor networks, multimedia communication, and modeling and performance evaluation.

NSF S&CC TEAM

Sylvia Spengler

Program Director — Division of Information and Intelligent Systems

Sylvia Spengler is program director in the Division of Information and Intelligent System (IIS) within the CISE Directorate at the National Science Foundation. The division focuses on advancing human-centered computing, information integration and informatics, and robust intelligence. She serves as the lead Program Director for BIGDATA and is also involved in the Smart and Connected Health, Smart and Connected Communities, and Cyber-Physical Systems programs.

Wendy Nilsen

Program Director — Computer & Information Science & Engineering

Wendy Nilsen, Ph.D. is a Program Director for Computer & Information Science & Engineering at the National Science Foundation. Her work focuses on the intersection of technology and health. This includes a wide range of methods for data collection, data analytics and turning data to knowledge. Her interests span the areas of sensing, analytics, cyber-physical systems, information systems, big data and robotics, as they relate to health. Wendy is also the lead program director for the NSF/NIH Smart and Connected Health program.

Sunil Narumalani

Program Director — Geography and Spatial Sciences

Dr. Sunil Narumalani received his Ph.D. From the University of South Carolina. He is a Professor at the University of Nebraska - Lincoln in the Department of Earth and Atmospheric Sciences. His research focus is in the geospatial sciences with applications in forestry, agriculture, marine resources, and urban areas. His research has also been in algorithm development for change detection studies. Dr. Narumalani is presently a Program Director at NSF in the Geography and Spatial Sciences program.

Jonathan Sprinkle

Program Director — Cyber-Physical Systems

Dr. Jonathan Sprinkle is a Program Director in Cyber-Physical Systems at the National Science Foundation in the division of Computer and Networked Systems. His research is in domain-specific modeling for cyber-physical systems with application to autonomous vehicles. Jonathan joined NSF in 2017 as a rotator from the University of Arizona, where he is the Litton Industries John M. Leonis Distinguished Associate Professor of Electrical and Computer Engineering.

Cynthia Chen

Program Director — Civil Infrastructure System

Cynthia Chen is the program director of the Civil Infrastructure Systems (CIS) program in the Division of Civil, Mechanical & Manufacturing Innovation (CMMI) at the National Science Foundation. She is also a professor in the department of civil and environmental engineering at the University of Washington, Seattle (UW). At UW, she directs the THINK (Transportation-Human Interaction-and- Network Knowledge) lab. Dr. Chen graduated from University of California, Davis with a PhD in civil and environmental engineering in 2001. Dr. Chen has served on a variety of TRB (Transportation Research Board) committees including for example, Travel Behavior and Values and Travel Survey committees. She has published over 50 peer-reviewed articles (https://scholar.google.com/citations?user=dtaR0JYAAAAJ).

Ryan Locicero

AAAS Fellow at the National Science Foundation

Ryan Locicero, Ph.D., PE, is an American Association for the Advancement of Science (AAAS) Science and Technology Policy (S&TP) Fellow at The National Science Foundation (NSF) in the Directorate for Computer and Information Science and Engineering's (CISE) Office of the Assistant Director (OAD). He contributes to CISE research and education activities, including Foundation-wide initiatives such as Smart & Connected Communities (NSF 16-610 & NSF 18-520) and Innovations at the Nexus of Food, Energy and Water Systems (NSF-16-524 & 18-545). Dr. Locicero received a Ph.D. in Environmental Engineering, M.E. in Environmental Engineering Sciences, and B.S. in Civil Engineering from the University of South Florida (USF), University of Florida, and USF respectively.

Michal Ziv-El

American Association for the Advancement of Science, Science and Technology Policy Fellow

Michal Ziv-El is an American Association for the Advancement of Science (AAAS) Science and Technology Policy Fellow at The National Science Foundation (NSF) in the Directorate for Computer and Information Science and Engineering (CISE). She contributes to the Smart and Connected Communities program, Cyber Physical Systems program, and communications for the CISE directorate. Michal received a B.S. in Physics and Mathematics from the University of Wisconsin-Madison and a Ph.D. in Environmental Engineering from Arizona State University (ASU). Her research leveraged knowledge of microbial ecology to design biological water treatment and bioremediation approaches, and to investigate the natural and built environments.

Meghan Houghton

Staff Associate for Strategic Engagements

Meghan Houghton, PhD, is Staff Associate for Strategic Engagements in the National Science Foundation's Computer and Information Science and Engineering (CISE) Directorate. Meghan supports emerging CISE research frontiers, including Smart and Connected Communities and the Platforms for Advanced Wireless Research Program, as well as cross-agency, industry, and international partnerships within CISE. Meghan co-chairs the Networking and Information Technology Research and Development (NITRD) Program's interagency Smart Cities and Communities Task Force.

FEDERAL S&CC PARTICIPANTS

David Kuehn

Program Manager, FHWA Exploratory Advanced Research Program

David Kuehn serves as the first Program Manager for the Federal Highway Administration (FHWA) Exploratory Advanced Research Program. The program focuses on longer term and higher risk research with the potential for transformational improvements to the transportation system. The Program Manager serves as the senior advisor to agency leadership; assures communication and coordination of exploratory advanced research activities; develops and implements the Exploratory Advanced Research Program's research agenda; fosters partnerships with other Federal agencies, national scientific societies and organizations, and the academic community in support of the Program; and scans and convenes activities associated with the program. David has a MPA from University of Southern California and BA from University of California Irvine.

Anthony Thomas

U.S. DOT Volpe Center

Anthony Thomas is a Technology Policy Analyst in the Technology Innovation and Policy Division at the U.S. DOT Volpe National Transportation Systems Center. Thomas supports several automation related projects for FHWA, FTA, and the ITS JPO, and specializes in developing dynamic educational materials to increase awareness regarding emerging vehicle technologies. Thomas also supports the FHWA Exploratory Advanced Research Program which focuses on research with the potential to transform the transportation system. Before coming to the U.S. DOT Volpe Center, Thomas studied at the Massachusetts Institute of Technology, earning a degree in urban planning.

Matthew Dalbey

Environmental Protection Agency

Matthew Dalbey is the director of the Office of Sustainable Communities at the US Environmental Protection Agency (EPA). He brings expertise in improving environmental outcomes through community-driven economic revitalization strategies. Upon in 2004, he focused on collaborating with private sector developers interested in creating mixed-use, walkable neighborhoods to meet growing market demand, and providing technical assistance to help cities and towns, particularly rural ones, leverage new development to support better health, clean air, and clean water outcomes. In 2010, he joined the Office of Sustainable Communities leadership team, where he has led partnerships with other federal agencies and states to support a cleaner environment, more efficient public investments in communities, and economic revitalization. In 2012 and 2013 he was the deputy director of the White House Council on Strong Cities, Strong Communities where he oversaw much of the day-to-day work supporting technical assistance in several metropolitan areas, including Fresno, Detroit, Cleveland, New Orleans, and Memphis. Recent efforts have focused on supporting economic revitalization in Appalachia and other economically distressed parts of rural America. Prior to joining EPA, Matthew was an assistant professor at Jackson State University in Jackson, Mississippi. He has a Ph.D. in Urban and Regional Planning from Columbia University, a Masters from the University of Virginia, and a Bachelor of Arts from the College of William & Mary.

John Thomas

Environmental Protection Agency

John Thomas is the Acting Associate Director for EPA's Office of Sustainable Communities. He works on sustainable transportation and land use planning issues at the Federal level and provides technical assistance to state and local governments. John is a contributor to several Federal initiatives working to advance sustainability, including the Federal Community Solutions Council. John is also an Adjunct Professor at George Washington University.

S&CC PROGRAM PARTICIPANTS

Sigrid Adriaenssens
Princeton University

Cajetan Akujuobi
Prairie View A&M University

David Allen
City of Prairie View

Rakesh Babu
Envision Research Institute

Clayton Banks
Silicon Harlem

Will Barkis
Orange Silicon Valley

Juan Pablo Bello
New York University

Hilary Boudet
Oregon State University

Lasse Bundgaard
Copenhagen Business School

Farah Cambrice
Prairie View A&M University

Carey Cayelan
Virginia Tech

T. Donna Chen
University of Virginia

Paul Coseo
Arizona State University

Jason Dedrick
Syracuse University

Lindsey Frost Dodson
Mozilla Foundation

Hongwei Dong
California State University, Fresno

Abhishek Dubey
Vanderbilt University

Shirley J. Dyke
Purdue University

Richard Feiock
Florida State University

Renato Figueiredo
University of Florida

Evgueni Filipov
University of Michigan

Jie Gong
Rutgers University

Sara Hamideh
Iowa State University

Zoé Hamstead
University at Buffalo

Brette Hjelle
City of Minneapolis,
Public Works Department

Gary Hobbs
BWI, LLC

Fang (Rachel) Jin
Texas Tech University

Panagiota Karava
Purdue University

S&CC PROGRAM PARTICIPANTS

Branko Kerkez
University of Michigan

Dan Kilper
University of Arizona

Gerrit-Jan Knaap
National Center for Smart Growth - University of Maryland

Richard C. Knopf
Partnership for Community Development - Arizona State University

Micah Kotch
Urban-X

Alexandros Labrinidis
University of Pittsburgh

Simon Laflamme
Iowa State University

Wonhyung Lee
University at Albany, State University of New York

Bruce Lincoln
Silicon Harlem

Katharine Lusk
Boston University

Michael Lysicatos
NJ Passaic County Dept of Planning & Economic Development

Cecil McMaster
NY Department of Environmental Protection

George Mohler
Indiana University - Purdue University Indianapolis

Erin Mullenix
Iowa League of Cities

Tischa A. Muñoz-Erickson
USDA Forest Service, International Institute of Tropical Forestry

Vinod Namboodiri
Wichita State University

Pamela Obiomon
Prairie View A&M University

Michael Ohlsen
City of Tallahassee Electric Utility

Eren Erman Ozguven
FAMU-FSU College of Engineering

Sanjay Padhi
Amazon Web Services

Daniel Palmer
Start Up In Residence, City Innovate

April Pattavina
UMASS Lowell

Robert Phocas
City of Charlotte

Christian Poellabauer
University of Notre Dame

Srinivas Pulugurtha
University of North Carolina, Charlotte

Tarek Rakha
Syracuse University

Anu Ramaswami
University of Minnesota

Kamran Saddique
City Innovate

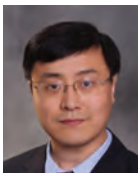
S&CC PROGRAM PARTICIPANTS

Harry Sheehan
Washtenaw County, Michigan

Shashi Shekhar
University of Minnesota

Douglas Shoemaker
Center for Applied GIScience, UNC Charlotte

Jacob Sipe
Indiana Housing & Community & Development Authority, BWI



Lu Su
State University of New York at Buffalo

Hamed Tabkhi
University of North Carolina, Charlotte

Ashley Thrall
Notre Dame University

Venki Uddameri
Texas Tech University

Eric Walker
Erie County Department of Public Works

Katie Whipkey
RAND Corporation

Ronald Williams
University of Virginia

Teresa Wu
Arizona State University

Anil Yazici
Civil Engineering, Stony Brook University

Yasin Yilmaz
University of South Florida

Zhigang Zhu
The City College of New York

Daphney-Stavroula Zois
University at Albany, State
University of New York

PROGRAM PARTICIPANTS

Sigrid Adriaenssens

Associate Professor, Princeton University

Sigrid Adriaenssens is an Associate Professor in the Department of Civil and Environmental Engineering at Princeton University. Her research goal is to transform the engineering approach to design through structural form for a sustainable and resilient built environment. Her current research interests are rigid, flexible and adaptive structural surface systems and the numerical approaches to generate (form finding), characterize (analyze) and optimize them. Her current scholarship includes shell and membrane structures under dynamic loading (earthquake and hydrodynamic loading) and adaptive flexible shells.

Cajetan M. Akujuobi, M.B.A., Ph.D.E.E, P.E.

Principal Investigator & Vice President for Research, Innovation and Sponsored Programs. Professor of Electrical Engineering, Prairie View A&M University (PVAMU).

Dr. Akujuobi is currently the Vice President for Research, Innovation & Sponsored Programs at Prairie View A&M University. He is the Principal Investigator to the NSF S&CC Planning Award at PVAMU. He is the founding Executive Director of the Systems to Enhance Cybersecurity for Universal Research Environment (SECURE) Center of Excellence and the founding Executive Director of the Center of Excellence for Communication Systems Technology Research (CECSTR) at PVAMU. He belongs to many professional organizations including IEEE, ISA, ASEE, SPIE, and Sigma XI. He has over 35 years of experience in engineering education, research and development. Some of his current research interests are Smart & Connected Cities Research, Cybersecurity and Wavelet Transform Applications.

David Allen

Mayor, City of Prairie View, Texas

David Allen is the new Mayor/CEO of Prairie View, Texas where he oversees the Administration, Police, Municipal Court and Utility Departments. He embraces that responsibility with commitment and the determination to make a difference for all of the approximately 20,000 residents, students, faculty and staff.

His association with Prairie View began with enrollment at Prairie View A&M University as a 17 year old student where he earned his Bachelor of Arts (December 1977) and MBA (August, 1983). It was here where he also became a Commissioned Officer as a Second Lieutenant in the US Army (Field Artillery) and was the last PVAMU Army ROTC cadet to receive a Private Pilot License (College Station 1977). A born entrepreneur, prior to graduation, he became a Licensed Automobile Broker and started business after receiving a loan from PVFCU assisting several fellow military officers in obtaining cars in Ft Sill, Oklahoma before relocating his business to Houston, Texas.

Mayor Allen in 15 months has led the way bringing in a $12 million gated student housing complex with 1,400 beds, a pool, gym then a Harvest Market Grocery Store on University Drive (land purchased); Checkers Restaurant Franchise/ gas station (pending), Pizza Hut, KFC and gas station near the New 84 acre Prairie View Cricket Complex with 12-14 fields making it the largest in the nation! PVAMU has purchased over 50 acres and are assisting the city in bringing in additional much needed development.

His work experience includes serving as an Accountant with PVAMU while pursuing his MBA; Franchise Consultant with 7-Eleven Division (Los Angeles) where he was responsible for several franchise and corporate stores and a $33 million budget that involved sales, profit & loss, marketing, operations, compliance with Corporate Franchise Agreements, Alcoholic Beverage Commission and gasoline operator laws; he a former Administrative Partner for a Civil Rights Law Firm (Los Angeles, California) where he managed the firms' finances, operations, and employees, and he assisted in discovery, lawsuits, and client interviews. His desire to be of service to others has led to involvement with organizations such as the Los Angeles NAACP (served as 1st Vice President & Executive Board Member) of which he is a life member; he founded the King Solomon Black College Tour & Education Consultants of California, which assisted thousands of Los Angeles area students and parents with the college process, including on-site visits; his volunteering with Crenshaw and Dorsey High School youths led the Los Angeles County Board of Supervisors to put him on contract to do more work with at-risk youth—that work led to workshops for thousands of others in and beyond the state of California.

David is semi-retired with LegalShield and is a CITRMS (Certified Identity Theft Risk Management Specialist). His most notable position was S. Texas Regional Vice President and Executive Director where he oversaw operations from San Antonio to Laredo, training and educating on the various legal plans and franchise business opportunities with LegalShield. His work also afforded him the opportunity to serve as guest speaker at a number of venues such as KJLH-Radio Los Angeles; Cox Radio-San Antonio; AFN Radio in Wiesbaden, Germany; National Bar Association Convention (Orlando, FL); and the National Black Nurses Convention (Los Angeles) to name a few. David is a semi-retired CITRMS by The Institute of Fraud Risk Management and is licensed by the Texas Department of License & Regulation and the Nebraska Department of Insurance. He has expertise in the five (5) Areas of Identity Theft; attending National Homeland Security and other conferences ensures that he stays abreast of cybersecurity and hacking concerns as well as the FACT Act and other State/Federal Privacy & Security Identity Theft Laws. Since 1998, he has assisted employers and organizations nationwide in starting the mandatory compliance process, training, information and awareness.

A number of business and non-profit communities have recognized his business and non-profit volunteer work including: Los Angeles County Board of Supervisors; California State Senators, California Assembly; Los Angeles NAACP; 100 Black Men of Los Angeles/Young Black Scholars; Delta Sigma Theta; Top Ladies of Distinction; Los Angeles City Council; various California news media; City of Prairie View (awarded Key to the City-Mayor, Dr.
R.E. Carreathers); Prairie View A&M University (Inaugural #1 Recruiter Award in July, 1998, Prairie View A&M University National Alumni Association (Alumnus of Year-1992, 1994, 1995); as President, Chapter of Year-- Award 1992, 1994); and appointed Honorary PALS member by President Hines.

David and his wife Marisol spent three years in Germany where they traveled to several countries including Rome, Pisa, Belgium, Poland, Austria, Netherlands, Dominican Republic and Egypt, they have three children.

PROGRAM PARTICIPANTS

Rakesh Babu

Lead Accessibility Scientist, Envision Research Institute

Rakesh Babu has driven a very active research agenda in the area of blind/visually impaired (BVI) accessibility for over 13 years. His work integrates research in Blind-Centered Computing, Information Systems, and the Cognitive Sciences to inform the development of IT artifacts and interventions for empowering blind citizens in the information society. Before joining Envision in 2018, he was a faculty member of the School of Information Studies, University of Wisconsin-Milwaukee for nearly 7 years.

Clayton Banks

CEO, Silicon Harlem

Clayton Banks is the Chief Executive Officer of Silicon Harlem. The mission of Silicon Harlem is to transform Harlem and other urban markets into Innovation and Technology Hubs. Under his leadership, Silicon Harlem has been focused on building affordable, smart, resilient, and fast, broadband networks in upper Manhattan. Mr. Banks has led the vision to increase digital literacy throughout the community for all citizens of all generations. Banks has committed Silicon Harlem to bring next generation technology into upper Manhattan to ensure low income citizens benefit from advanced innovation. Banks has been named to the New York City Mayor's Tech Council, serves on the NYC Public Advocate's commission on public information and communication, collaborates with the Manhattan Borough President on smart city initiatives, board member of the Greater Harlem Chamber of Commerce, board member of the Armory Foundation, board member of the Manhattan Educational Opportunity Center, and is dedicated to building inclusive tech-enabled economic engines within marginalized communities that will foster jobs, attract business and offer economic prosperity for all.

PROGRAM PARTICIPANTS

Will Barkis, PhD

Principal, Smart Cities

Will Barkis, PhD, is Principal, Smart Cities at Orange's Silicon Valley innovation lab, where he leads the Smart Cities/Technology for Cities portfolio. Orange is a leading global telecommunications operator serving 269 million customers in 29 countries and providing digital services for enterprise customers in 220 countries and territories. Will currently serves as Volunteer Technology Advisor to the SF Mayor's Office of Civic Innovation developing strategy on Smart Cities and the Internet of Things for San Francisco. He also serves as the Community Technology Leader for San Francisco's US Ignite Smart Gigabit Communities initiative. He formerly served as Director of Mozilla's Gigabit Community Fund and has worked at the National Science Foundation, where he collaborated with the White House to launch the US Ignite next-generation apps initiative.

Juan Pablo Bello

Associate Professor, Music Technology, Computer Science & Engineering, New York University

Juan's expertise is in digital signal processing, machine listening and music information retrieval, topics in which he has published more than 80 papers and articles in books, journals and conference proceedings. He is director of NYU's Music and Audio Research Lab (MARL), where he leads research on sound informatics. His work has been supported by public and private institutions in Venezuela, the UK, and the US, including Frontier and CAREER awards from the National Science Foundation and a Fulbright scholar grant.

PROGRAM PARTICIPANTS

Hilary Boudet

Assistant Professor, Oregon State University

Hilary Boudet is an Assistant Professor of Climate Change and Energy in the School of Public Policy at Oregon State University. Her research interests include environmental and energy policy, social movements, and public participation in energy and environmental decision making.

Lasse Bundgaard

Industrial PhD Student, City of Copenhagen/ Copenhagen Business School

Lasse is an Industrial PhD Student hosted by Copenhagen Solutions Lab and Copenhagen Business Schools' Department of Business and Politics. He has professional experience from the Finance Department of the City of Copenhagen and academic experience with public organizations' role in innovation and in particular demand-side innovation policy and Public-Private Partnerships. Lasse's PhD aims to provide the City of Copenhagen with knowledge of how to scale up innovation developed in Public-Private Partnerships to ensure that value is created for citizens, as well as for the partners to the projects.

Farrah Gafford Cambrice, Ph.D

Assistant Professor, Sociology, Prairie View A&M University

Farrah Gafford Cambrice, Ph.D., is Assistant Professor in the Division of Social Work, Behavioral and Political Sciences at Prairie View A&M University. Her research interests include race, class, community building, and disaster. Dr. Cambrice's research on Hurricane Katrina has resulted in several peer-reviewed publications in the *Journal of Black Studies*, and *The Journal of Global Policy and Resilience and Journal of Urban History.*

Dong Cao (Co-PI)

Assistant Professor, Electrical and Computer Engineering Department, NDSU

Dong Cao (Co-PI), an Assistant Professor with the Electrical and Computer Engineering department at NDSU. His expertise includes the design of efficient power electronic interfaces for renewable energy integration, wide bandgap (GaN/SiC) devices-based power conversion system, Z-source inverters/converters, multilevel inverter/converters, soft-switching, switched-capacitor DC- DC converters, and intelligent gate drivers for high power devices (IGBT/MOSFETs). He has prior industrial experience with Ford. He is currently leading some industry-funded projects, notably with Google and John Deere.

PROGRAM PARTICIPANTS

Cayelan C. Carey

Assistant Professor, Department of Biological Sciences, Virginia Tech

Cayelan C. Carey is an Assistant Professor of the Department of Biological Sciences at Virginia Tech. Dr. Carey received an A.B. in Environmental Biology from Dartmouth College and a Ph.D. in Ecology from Cornell University. Prior to joining the faculty at Virginia Tech, Dr. Carey was a Fulbright Fellow at Uppsala University, Sweden, and a Postdoctoral Research Associate at the University of Wisconsin-Madison. Her research program studies freshwater ecosystem science, specifically focusing on how feedbacks between food webs and biogeochemical cycling can mediate ecosystem resilience to eutrophication and climate change. She uses high-frequency sensors, simulation models, field experiments, and long-term data analysis to study how lakes and reservoirs respond to human activities over minute to decadal time scales.

T. Donna Chen

Assistant Professor, Department of Civil & Environmental Engineering, University of Virginia

T. Donna Chen is an Assistant Professor in the Department of Civil & Environmental Engineering at the University of Virginia. Her research focuses on sustainable transportation systems (in particular the impacts of new vehicle technology systems on travel behavior and the environment), travel demand modeling, transportation economics, and vehicle and bicycle crash safety. Her most recent research examines the impact of a fleet of self-driving electric vehicles that continuously serve sequential trip demand. She is a member of the Transportation Research Board's Committee on Alternative Transportation Fuels and Technologies and the American Society of Civil Engineers' Transportation and Development Institute Committee on Public Transit. Prior to joining academia, she worked in the consulting industry as a transportation planning engineer and has experience with roadway design, cost estimation, and traffic operation analyses.

PROGRAM PARTICIPANTS

Paul Coseo

Assistant Professor, Arizona State University

Paul Coseo examines three connected lines of research on urban ecological and climatic design, design approaches to address climate change adaptation, and social learning through design. He approaches research, teaching, and practice with a humble appreciation for how our design decisions impact the sustainability of natural and social environments. At Arizona State University (ASU), he serves as a co-lead of the Urban Design theme for the Central Arizona Phoenix Long Term Ecological Research Project. His other areas of interest include environmental negotiation, community engagement, and social justice.

Jason Dedrick

Professor, School of Information Studies, Syracuse University

Jason Dedrick is a professor with the School of Information Studies at Syracuse University. He also is a Faculty Fellow at the Syracuse Center of Excellence. His research interests include the globalization of information technology, the economic and organizational impacts of IT, adoption of smart grid technologies by electric utility companies, privacy issues related to smart meters and cybersecurity challenges of dynamic distributed electricity markets. He also is working on the new topic of community energy programs. He is Principal Investigator on grants from the National Science Foundation and the Alfred P. Sloan Foundation.

Tanya Denckla

Director, Cobb Institute for Environmental Negotiation

At the Institute for Environmental Negotiation (IEN) since 1997 and appointed director in 2015, Tanya Denckla Cobb is a seasoned mediator and facilitator in environmental public policy. She is also an author and a teacher. IEN is a nationally recognized leader in fostering collaborative change across a broad range of issues through multi-agency and multi-stakeholder processes as well as through community outreach and engagement. IEN's portfolio addresses a broad range of environmental, economic and social issues, including community resilience, race and social equity, water quality, and rural development. Team members are known for expertise in designing and facilitating collaborative processes, community-based research, and stakeholder engagement.

Rachel DiFranco

City of Fremont

Rachel DiFranco is a LEED O+M Accredited Professional with a Master's Degree in Natural Resources & Sustainable Development. As Sustainability Manager for the City of Fremont, Rachel is responsible for implementing Fremont's Climate Action Plan, helping the city transition from an auto-oriented suburb into a sustainable, strategically urban, modern city.

PROGRAM PARTICIPANTS

Lindsey Frost Dodson

Program Director, Mozilla

Lindsey Frost Dodson is a program director at Mozilla Foundation where she oversees the foundation's awards and grants programs. As part of this work, she leads Mozilla's collaborations with the National Science Foundation, including the Mozilla Gigabit Community Fund and the NSF-WINS Competitions. A native of Chattanooga, TN, Lindsey has previously worked with the University of Tennessee, the Public Education Foundation, and Toshiba America Foundation. She is a graduate of Columbia University.

Dr. Hongwei Dong

Associate Professor, Department of Geography and City & Regional Planning, California State University, Fresno

Dr. Hongwei Dong is an Associate Professor in city and regional planning at the California State University, Fresno. He is on sabbatical leave and a visiting scholar with the Institute of Transportation Studies at UC Davis in spring 2018. His research interests include transportation and land use, healthy and smart cities, and housing affordability and equity. The results of his studies are published in top international journals such as *Journal of the American Planning Association, Journal of Planning Education and Research, Journal of Transport Geography, Landscape and Urban Planning, Urban Studies,* etc.

PROGRAM PARTICIPANTS

Dr. Abhishek Dubey

Assistant Professor, Institute for Software-Integrated Systems

Dr. Abhishek Dubey is an assistant professor in the Department of Electrical Engineering and Computer Science, Senior Research Scientist at the Institute for Software-Integrated Systems, and co-lead for the Vanderbilt Initiative for Smart Cities Operations and Research (VISOR). His research interests are in the area of resilient system design, data-driven analysis, and failure management of smart and connected community systems, with a focus on transportation and electrical networks. Abhishek completed his PhD in Electrical Engineering from Vanderbilt University in 2009, and Bachelor of Technology in Electrical Engineering from the Indian Institute of Technology, BHU, India, in 2001.

Shirley J. Dyke

Professor, Purdue University

Professor Shirley J. Dyke holds a joint appointment in Mechanical Engineering and Civil Engineering, and is the director of Purdue's Intelligent Infrastructure Systems Lab at Bowen Lab. Her research focuses on the development and implementation of "intelligent" structures, and her innovations encompass structural control technologies, structural health monitoring, real-time hybrid simulation, and machine learning and computer vision for structural damage assessment. She holds a B.S. in Aeronautical and Astronautical Engineering from the University of Illinois, Champaign-Urbana in 1991 and a Ph.D. in Civil Engineering from the University of Notre Dame in 1996.

PROGRAM PARTICIPANTS

Richard Feiock

Professor, Florida State University

Richard Feiock is internationally recognized for his expertise in urban governance, sustainability, and local democratic institutions. Turnbull Professor of Public Administration and Policy in the Askew School at Florida State University. He is the founding director of the Local Governance Research Laboratory. He is a National Academy of Public Administration fellow, served on the U.S. Environmental Protection Agency Board of Scientific Counselors and as Editor of Public Administration Review. Among his numerous career awards are the Donald C. Stone Award for contributions to the field of intergovernmental management and the Daniel Elazar Distinguished Federalism Scholar Award.

Renato J. Figueiredo

Professor, University of Florida

Renato J. Figueiredo is a Professor of the Department of Electrical and Computer Engineering of the University of Florida. Dr. Figueiredo received his B.S. and M.S. degrees in Electrical Engineering from the Universidade de Campinas and his Ph.D. degree in Electrical and Computer Engineering from Purdue University. His research interests are in the areas of virtualization, distributed systems, overlay and software-defined networks, cloud and edge computing, and their applications in support of computational science in domains including lake ecology, bio-diversity, and smart and connected communities. Dr. Figueiredo's research team leads the IPOP (IP-over-P2P) open-source overlay virtual network project.

PROGRAM PARTICIPANTS

Evgueni Filipov

Assistant Professor, University of Michigan

Evgueni Filipov is an Assistant Professor in the Department of Civil and Environmental Engineering at the University of Michigan. His research interests are focused on the mechanics, analysis, and fabrication techniques for origami-inspired deployable and reconfigurable structures. These thin sheet systems can have practical applications ranging in scale and discipline from from metamaterials with variable stiffness and porosity to full scale deployable bridge structures. Filipov holds MS and PhD degrees in Civil Engineering from the University of Illinois at Urbana-Champaign, and a BS from Rensselaer Polytechnic Institute.

Dominic Fischer (Co-PI)

Assistant Professor, North Dakota State University, Fargo

Dominic Fischer (Co-PI) is an Assistant Professor with the department of Architecture and Landscape Architecture at NDSU and is a registered landscape architect in North Dakota. His research examines the relations between public infrastructures and interruptions in both social and natural systems. His expertise includes small urban space and streetscape assessment and collaborative design methods for professional pedagogy and practice. He has been regionally recognized for his work with the Double Ditch Indian Village Historic Site and continues community engaged work with NDSU and the Northern Plains National Heritage Area in partnership with the National Park Service.

Jie Gong

Assistant Professor, Department of Civil and Environmental Engineering, Rutgers, The State University of New Jersey

Jie Gong, Ph.D., is an Assistant Professor in the Department of Civil and Environmental Engineering at Rutgers University. Gong's general research interest is in the field of community resilience, critical infrastructure protection, and smart cities. His recent research focuses on two fronts: (1) the convergence of geospatial big data, artificial intelligence, and infrastructure system modeling for disaster management; and (2) smart and autonomous systems for building and infrastructure condition assessment. He has published over 60 papers and his research work has been supported by USDOT, FHWA, NSF, USHUD, FEMA, DHS, NJDOT, NJBPU, PANYNC, NJDEP as well as by industry.

Mark R. Hafen

Assistant Director & Master Instructor, Univ. of South Florida, School of Public Affairs

Mark Hafen directs the Master of Urban & Regional Planning program at USF, with an emphasis on urban environmental policy and planning in coastal communities. He holds a B.S. in Business Logistics (Penn State), an M.A. in Geography (USF) and a Ph.D. in Marine Science (USF). He has professional experience in land use planning, and has lived in the Tampa Bay region since 1986. He has co-authored a book (Hine et al.), Sea Level Rise in Florida: Science, Impacts and Options (University Press of Florida), and actively serves as a member of the Tampa Bay Climate Science Advisory Panel.

PROGRAM PARTICIPANTS

Sara Hamideh

Assistant Professor, Iowa State University

Sara Hamideh holds a B.A. and M.A of urban planning from Universities of Mazandaran and Tehran and a Ph.D. in urban and regional sciences from Texas A&M University. Her research in planning focuses on post-disaster recovery and housing inequalities. Her work has appeared in the International Journal of Mass Emergencies and Disasters, Natural Hazards Review, Journal of Sustainable and Resilient Infrastructure, as well as an edited book on Tehran. Sara's current research and writing is focused on resiliency planning and shrinking places in Iowa.

Zoé Hamstead

Assistant Professor, Department of Urban & Regional Planning, University at Buffalo

Zoé Hamstead, PhD, is an assistant professor of environmental planning. She directs the Community Resilience Lab, an interdisciplinary research team that is working with local governments, organizations and citizen scientists to develop socially equitable, livable and healthy communities in the context of urbanization and climate change. Building on approaches in urban planning, geography, urban ecology and landscape ecology, she examines spatial justice, vulnerability to weather extremes, multi-sectoral environmental management, access to social-ecological resources and other integrative topics.

PROGRAM PARTICIPANTS

Brette Hjelle

Minneapolis Public Works Department

Brette Hjelle has been working in policy and leadership roles at the City of Minneapolis for 17 years. He is currently the Director of Business Administration for the Minneapolis Public Works Department. In this role, he provides leadership and oversight in the areas of policy and innovation, finance, personnel, and safety and training for the 1,200 person department. Brette started his Minneapolis career on Mayor Sharon Sayles Belton's staff followed by five years as policy aide to a Minneapolis City Council Member. Brette has a B.A. in Political Science and an M.A. in Public Administration.

Gary Hobbs

President and CEO, BWI, LLC

Mr. Hobbs is a business-technology executive leading BWI's urban development and construction services that specialize in implementing sustainable energy solutions into mixed-use and mixed-income projects. He focuses on under-served urban communities via economic development strategies that aligns with their Quality of Life aspirations. As an engineer, project manager, business executive, developer, and entrepreneur he has led organizations up to four hundred people and project budgets spanning $1M to $100M.

PROGRAM PARTICIPANTS

Fang (Rachel) Jin

Assistant Professor, Texas Tech University

Fang Jin is an Assistant Professor of Computer Science at Texas Tech University. Her research interests lie in the area of machine learning, big data analytics, social network analysis and anomaly detection. She seeks to apply data mining to big data to discover deeper insights for social good.

Panagiota Karava

Associate Professor, Lyles School of Civil Engineering, Center for High Performance Buildings, Purdue University

Dr. Karava joined Purdue in 2009 as a founding member of the Architectural Engineering Program within the School of Civil Engineering and since then she has played a leading role in establishing the new program. Her research interests are broadly related to smart buildings and energy-aware communities. She is the recipient of the 2014 Wansik Research Excellence Award at Purdue, the 2013 New Investigator Award from ASHRAE and serves as an editor for the Energy and Buildings journal.

Rajesh Kavasseri (PI)

Professor, Electrical and Computer Engineering department at North Dakota State University, Fargo

Rajesh Kavasseri (PI) is a Professor with the Electrical and Computer Engineering department at NDSU. His expertise includes the operation, dynamics, stability, protection and control of bulk electric power systems and microgrids interfaced with renewable energy sources. He is currently leading an NSF-funded project on wide area resilient protection of power systems and serves as an Editor for the IEEE Transactions on Sustainable Energy. He has also conducted outreach activities onsite at tribal institutions in North Dakota through the Sunday Academy program associated with the NATURE (Nurturing American Tribal Undergraduate Research and Education) program and is committed to working with these institutes.

Branko Kerkez

Assistant Professor, Civil and Environmental Engineering department at the University of Michigan

Branko Kerkez an assistant professor in the Civil and Environmental Engineering department at the University of Michigan. His research interests include water, data, and sensors. He heads the Real-time Water Systems Lab, where his group is presently conducting fundamental research on “smart” water systems. Dr. Kerkez is the founder of Open-Storm.org, an open source consortium dedicated to freely sharing technologies and lessons for the sensing and control of water systems. He received his M.S. and Ph.D. in Civil and Environmental Engineering, and an M.S. in Electrical Engineering and Computer Science, all from UC Berkeley. He was recognized in 2018 by National Academy of Engineering as a Gilbreth Lecturer, presenting on the topic of smart stormwater systems.

PROGRAM PARTICIPANTS

Dan Kilper

Research Professor, University of Arizona

Dr. Dan Kilper is a university professor and entrepreneur with over a decade of industry experience at Bell Labs. He holds faculty positions in the College of Optical Sciences and Electrical and Computer Engineering at the University of Arizona, Tucson, and an adjunct appointment at Columbia University. He is the founder and CTO of Palo Verde Networks, a startup that is developing a new generation of fiber optic networks. His research is aimed at solving fundamental and real world problems in photonic systems and networks in order to create a faster, more affordable, and energy efficient Internet, addressing interdisciplinary challenges for smart cities, sustainability, and digital equality.

Gerrit-Jan Knaap

Professor, University of Maryland

Gerrit-Jan Knaap is Professor of Urban Studies and Planning and Director of the National Center for Smart Growth at the University of Maryland. As such he serves on the Maryland State Sustainable Growth Commission, the Smart Growth Subcabinet, and the Governors' advisory committee. Knaap is the co-author or co-editor of nine books and more than 60 peer-refereed journal articles. Trained as an economist, Knaap research interests include urban economics, politics, and planning, economic development, environmental policy, and social equity.

PROGRAM PARTICIPANTS

Dr. Richard C. Knopf

Director, Osher Lifelong Learning Institute at Arizona State University (OLLI at ASU)

Dr. Knopf serves as Director of Osher Lifelong Learning Institute at Arizona State University (OLLI at ASU). He is a Professor of Community Resources and Development at ASU, and also directs the ASU Partnership for Community Development. His expertise rests in advancing community quality of life by building innovative partnerships among businesses, government, non-profit and community service organizations. Holding a doctorate in environmental planning from the University of Michigan, his primary research focuses on the role of social sciences in addressing the most vexing challenges of rapidly expanding urban environments.

Micah Kotch

Managing Director, URBAN-X by MINI and Urban Us

Micah Kotch serves as Managing Director of URBAN-X by MINI and Urban Us. URBAN-X is the accelerator for startups reimagining city life. Before joining URBAN-X, Micah served as Director of NY Prize and Strategic Advisor for Innovation at NYSERDA. At the NYU Tandon School of Engineering Micah served as Director of Innovation and Entrepreneurship, where he launched NYC's first sponsored tech incubator and the Urban Future Lab - helping startups address mobility, climate, energy and resiliency opportunities. He is a core national faculty member for the National Science Foundation's i-CORPS program which commercializes federally-funded research. A Brooklyn native (where he lives with his family), he is a proud board member for Green City Force, an AmeriCorps program that engages young adults from low income communities in national service.

PROGRAM PARTICIPANTS

Alexandros Labrinidis

Professor, University of Pittsburgh

Dr. Alexandros Labrinidis is a Professor of Computer Science in the new School of Computing and Information at the University of Pittsburgh. He is also the Co-Director of the Advanced Data Management Technologies Laboratory and has an adjunct professor appointment at Carnegie Mellon University.

Dr. Labrinidis' research focuses on user-centric data management for scalable network-centric applications, including data stream management systems, urban informatics, and sensor networks. He has published over 100 papers in peer-reviewed journals, conferences, and workshops and was the recipient of an NSF CAREER award in 2008.

Simon Laflamme

Associate Professor, Iowa State University

Dr. Laflamme is an Associate Professor in the Department of Civil, Construction, and Environmental Engineering at Iowa State University. He holds a courtesy appointment in the Department of Electrical and Computer Engineering, and is an associate director of the Center for Nondestructive Evaluation. Dr. Laflamme received his Ph.D in Structures and Materials (2011) from the Massachusetts Institute of Technology. He was awarded the Early Achievement in Research Award by Iowa State University in 2017. Dr. Laflamme is currently leading research funded by AFOSR, NSF, and USDOT in the field of smart structures and systems. His research interests include structural control, smart systems, smart materials, and structural health monitoring.

PROGRAM PARTICIPANTS

Wonhyung Lee

Assistant Professor, School of Social Welfare, University at Albany, SUNY

Wonhyung Lee is an Assistant Professor at the School of Social Welfare of the University at Albany, State University of New York. With her background in social work and urban planning, her research centers on community development and neighborhood revitalization, with an emphasis on understanding the meaning of development and revitalization in multiple dimensions. In addition to the Smart and Connected Communities (S&CC) project, she is currently conducting research that concerns how various population groups access community resources, including but not limited to food, employment, and borrowing opportunities.

Bruce Lincoln

CTO, Silicon Harlem

Bruce Lincoln is the Co-Founder of Silicon Harlem (http://wwwsiliconharlem.net). Silicon Harlem is a nationally recognized for-profit social venture dedicated to transforming Harlem into a hub for technology and innovation. A member of the Mayor's Broadband Advisory Task Force, Bruce has been at the forefront of the equitable development of the Internet in Harlem and the City of New York since 1994. From 1994 until 2004, Bruce was the Senior Educational Technologist and Manager of Community Outreach at the Institute for Learning Technologies at Teachers College, Columbia University where he managed a ten-year cycle of projects that served as national models for equity and access to the socioeconomic benefits of Internet.

Katharine Lusk

Executive Director, Initiative on Cities, Boston University

Katharine Lusk is the founding Executive Director of the Initiative on Cities at Boston University, which seeks to research, advance and promote the leadership strategies and policies necessary for cities and urban populations to thrive. She spearheads new university-wide programs and research, including the Menino Survey of Mayors, student government fellowships and multi-stakeholder conferences, and serves as Senior Personnel to a number of federally funded research grants devoted to smart cities and urban environments. Katharine formerly served as a Policy Advisor to the late Boston Mayor Tom Menino, where she led his work to make Boston the first city in the country to achieve pay equity for women. She created the City of Boston's Women's Workforce Council, a unique collaborative governance partnership, and now serves on the Council as an appointee of Mayor Martin Walsh. She also serves on the International Impact Committee for the National Democratic Institute's Women Mayors' Network and on the advisory boards of the BU Institute for Sustainable Energy, the BU City Planning and Urban Affairs Program and the Boston Area Research Initiative. Prior to entering public service, Katharine worked as a Brand Strategist and Researcher for Fortune 500 companies. She received a Masters in Public Policy from the Harvard Kennedy School of Government and earned her BA from Williams College.

Mike Lysicatos

Assistant Director, Passaic County Department of Planning and Economic Development

As Assistant Director and Senior Planner with the Passaic County Department of Planning and Economic Development, Mike had the opportunity to collaborate and manage the development of several master plan elements including the Transportation Element, Highlands Element, Open Space and Recreation Plan, Heritage Tourism Element and Morris Canal Greenway Feasibility Study. His work emphasized community engagement, including facilitating eight municipal visioning studies. He managed the development of the countywide GIS system and the graphics used in all mapping and reporting. He is the County's representative of the NJTPA RTAC and with several other public agencies and has spoken at several professional conferences and seminars on the department's accomplishments, including a focus on the Complete Streets policies and other multi-modal projects within the county.

Cecil McMaster

Deputy Commissioner/Chief Information Officer, New York City Department of Environmental Protection (DEP)

Cecil McMaster is the Chief Information Officer and Deputy Commissioner for the Office of Information Technology at the Department of Environmental Protection (DEP). Cecil had previously served a total of 13 years at DEP, including as DEP's CIO for seven of those years, from 2004 to 2011. Two years prior to his most recent appointment at DEP, Cecil was the Director of Infrastructure at Web.com, as well as the New York City Consulting Practice Manager for Microsoft.

PROGRAM PARTICIPANTS

George Mohler

Associate Professor, Indiana University - Purdue University Indianapolis

George Mohler is an Associate Professor of Computer Science at IUPUI and a co-founder of PredPol, a predictive analytics company serving law enforcement. His research focuses on the design of algorithms and software tools for the estimation of risk in social systems and to help police and city governments allocate resources in response. Mohler has previously held positions at Santa Clara University and UCLA after receiving his Ph.D. in Mathematics from the University of California Santa Barbara. Mohler's research is supported by the National Science Foundation and has been featured in the New York Times, the Economist, TIME, Popular Science, and other international news outlets.

Erin Mullenix

Research Director, Iowa League of Cities

Erin Mullenix is an experienced research director at the Iowa League of Cities. In her role, she provides local government research in a variety of areas, including local government finance, policy issues, and data-driven decision-making. Erin returned to the League recently, after having previously worked there for several years. Most recently, Erin worked at Iowa State University as the Director of Data-Driven Science in the Office of the Vice President for Research. While at Iowa State, Erin directed campus activities in data-driven science and coordinated engagement with the Midwest Big Data Hub. Erin has worked in both the private and public sectors, including integration at the federal, state, and local levels. She holds a master's degree in public administration from the University of Nebraska-Omaha, as well as degrees in industrial engineering and Spanish from the University of Iowa.

Tischa Muñoz-Erickson

Research Social Scientist, International Institute for Tropical Forestry, USDA Forest Service

Tischa Muñoz-Erickson is Research Social Scientist in the International Institute for Tropical Forestry, USDA Forest Service. She leads the USFS International Urban Field Station, the San Juan NSF-USFS Urban Long-Term Research Area (ULTRA) and is Co-PI of the NSF's Urban Resilience to Extreme Events Sustainability Research Network (UREx SRN) and the UREx IRES. Her research is currently focused on governance for urban resilience and sustainability, including knowledge systems innovation, transdisciplinary networks, scenario development, and visualization technologies to build anticipatory capacities and facilitate co-production of knowledge and sustainability strategies in cities in the U.S., Latin America, and the Caribbean.

Vinod Namboodiri

Associate Professor, Electrical Engineering and Computer Science, Wichita State University

Vinod Namboodiri's current research interests lies in the design and application of technology for greater accessibility, with a particular emphasis on wayfinding for people with disabilities. At Wichita State University, he directs both the Wireless, Networking, and Systems Research Laboratory and the NSF-funded Research Experience for Undergraduates (REU) site on Networked Cyber-Physical Systems. He holds a joint appointment as Senior Scientist at the Envision Research Institute.

Pamela Holland Obiomon

Professor and Department Head, Electrical and Computer Engineering, Department of ELectrical Engineering, Prairie View A&M University, TX

Pamela Obiomon earned a B.S. degree in Electrical Engineering from the University of Texas at Arlington, a M.S. in Engineering from Prairie View A&M University, and a Ph.D. in Electrical Engineering from Texas A&M University. She joined the faculty at Prairie View A&M University in 2003. She is currently a Professor and the Department Head of the Electrical and Computer Engineering Department at Prairie View A&M University. Her research areas include: Environmental Sensing with Smart Systems using FPGAs and Designing FPGA-based Controllers for Autonomous Vehicles. Dr. Obiomon is a member of IEEE, IEEE Women in Engineering, and Eta Kappa Nu.

Michael Ohlsen

Demand Side Energy Manager, City of Tallahassee Utilities

Michael Ohlsen serves as the City of Tallahassee's Demand Side Management (DSM) Administrator, coordinating energy efficiency and demand reduction efforts for the City's electric utility. Prior to joining the City, Michael served in the Florida Governor's Energy Office, Florida Department of Environmental Protection, Solid Waste Association of North America, and as an officer in the U.S. Air Force. Michael is a certified energy manager (CEM) and public manager (CPM) with a BS in Electrical Engineering from Cornell University and an MS in Industrial Engineering from the University of Tennessee.

PROGRAM PARTICIPANTS

Eren Erman Ozguven (Co-PI)

Assistant Professor, Department of Civil and Environmental Engineering, Florida A&M University-Florida State University College of Engineering, Tallahassee, FL

Dr. Ozguven is an Assistant Professor at the Department of Civil and Environmental Engineering of the Florida A&M University-Florida State University College of Engineering. Dr. Ozguven's general research interests include emergency transportation operations, modeling of transportation networks, transportation accessibility and safety, connected vehicles, intelligent transportation systems, smart cities and urban mobility. In the last three years, his research program has evolved towards studying the accessibility and reliability of the multi-modal transportation networks (both daily and emergency conditions, focusing on the transportation safety and accessibility needs of at-risk populations such as the aging demographic.

Dr. Sanjay Padhi

AWS Research and Technical Computing, WWPS, Amazon Web Services.

Dr. Sanjay Padhi leads the AWS Research Initiatives including AWS's federal initiatives with the National Science Foundation. Dr. Padhi has more than 15 years of experience in large-scale distributed computing, Data Analytics and Machine Learning. He is the co-creator of the Workload Management System currently used for all the data processing and simulations by CMS, one of the largest experiments in the world at CERN, consisting of more than 180 institutions across 40 countries. He also co-founded the ZEUS Computing Grid project at Deutsches Elektronen-Synchrotron (DESY), Germany before joining CERN. Sanjay obtained his Ph.D from McGill University in High Energy Physics and is also appointed by the Dean of Faculty as an Adjunct Professor of Physics at Brown University.

PROGRAM PARTICIPANTS

Daniel Palmer

Program Manager, Startup in Residence

Daniel Palmer helps cities improve the services that they deliver their residents and entrepreneurs scale new civic tech products as the Program Manager for Startup in Residence. Founded in San Francisco in 2014, the Startup in Residence program is currently working with entrepreneurs on 19 projects in 9 cities across the United States; 8 STIR startups were featured in the 2018 Govtech 100 list. Before moving to San Francisco, Daniel managed special projects related to housing insecurity and digital inclusion for the city of South Bend, Indiana, and – prior to that - worked with federal agencies and donor organizations as a management consultant.

April Pattavina, Ph.D.

Associate Professor, School of Criminology and Justice Studies, University of Massachusetts Lowell

April Pattavina, Ph.D., is Associate Professor in the School of Criminology and Justice Studies at the University of Massachusetts Lowell. Her research areas include: the study of technological innovation in criminal justice agencies; the justice system response to sexual violence; intimate partner violence; gendered pathways to criminal offending and rehabilitation; racial and gender disparities in the criminal justice system; alternatives to incarceration that consider ties to families, communities and support networks; program evaluation; and the application of technological innovation to support behavioral change. She is currently involved in several projects to examine the adoption of new technologies in correctional systems and practices.

Robert Phocas

Sustainability Director, City of Charlotte, NC

Rob serves as the sustainability director for the City of Charlotte, an organization of 7,000+ staff and a City with nearly 800,000 residents. He supports a variety of internal and external programs in the energy, environment and sustainability spaces. Internally, he manages the city internal environmental operations program. Externally, he focuses on smart city projects that use data, technology and cooperation to address community challenges and opportunities.

Christian Poellabauer

Associate Professor, University of Notre Dame

Dr. Christian Poellabauer is currently an Associate Professor of Computer Science and Engineering at the University of Notre Dame, where his research focuses on mobile computing, sensor networks, healthcare technologies, and wireless systems. He holds an M.S. degree in Computer Science from the University of Technology Vienna and a Ph.D. in Computer Science from the Georgia Tech. He has published over 120 peer-reviewed journal and conference papers with funding provided by NIH, NSF, ARO, AFOSR, ONR, Department of Education, National Geographic, the NFL, Toyota, Ford Research, Motorola, GE Health, IBM, and Intel. He is the recipient of a 2006 NSF CAREER award and he is a member of AAAS and a senior member of IEEE and ACM.

PROGRAM PARTICIPANTS

Srinivas S. Pulugurtha, Ph.D., P.E., F.ASCE

Professor & Graduate Program Director, Department of Civil & Environmental Engineering, Director of IDEAS Center, The University of North Carolina at Charlotte (UNC Charlotte)

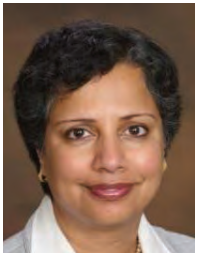
Dr. Pulugurtha teaches graduate as well as undergraduate courses and conducts research in transportation engineering field. He has led and completed 70 sponsored projects ($7+ millions in total funding) as Principal Investigator (PI) or co-PI. He authored / co-authored over 200 publications and over 200 technical presentations at international, national, regional and local conferences. Furthermore, Dr. Pulugurtha advised and mentored 12 Ph.D. students, over 50 M.S. students, and several undergraduate students. His areas of expertise and interest include transportation safety (includes pedestrian safety), Intelligent Transportation Systems (ITS), transportation system planning & traffic operations, and Geographic Information Systems (GIS), Internet mapping and operations research applications.

Dr. Tarek Rakha

Assistant Professor, Syracuse University

Dr. Tarek Rakha is an architect, building scientist and educator. He is an assistant professor at Syracuse University, teaching studios, courses and seminars that integrate design with in-depth environmental performance analysis. As a faculty research fellow at the Syracuse Center of Excellence (SyracuseCoE), he is founder and director of the Performative Praxis Lab (PPL), a Syracuse Architecture research lab housed at the SyracuseCoE. PPL aims to influence architecture, urban design and planning practices through three areas of expertise: sustainable urban mobility and outdoor thermal comfort; daylighting and energy simulation in buildings, and building envelope diagnostics using drones.

PROGRAM PARTICIPANTS



Anu Ramaswami

Chair Professor, Science Technology & Environmental Policy, University of Minnesota

Anu Ramaswami, Chair Professor of Science Technology & Environmental Policy at the University of Minnesota, is among the leading scholars on sustainable urban infrastructure. She is co-Director of a US National Science Foundation Smart and Connected Communities grant, lead PI and Director of the interdisciplinary NSF Sustainable Healthy Cities Network, serves on the United Nation's International Resource Panel, and co-chairs its inaugural report on SDGs. Her work has been adopted as policies and protocols for developing sustainable cities in the US and internationally. Ramaswami's research spans environmental science, industrial ecology, sustainable infrastructure design and policy, and urban systems analysis.

Kamran Saddique

Executive Director, City Innovate Foundation

Kamran is the co-founder and Executive Director of City Innovate Foundation, and launched Superpublic with the Mayor's Office of San Francisco, UC Berkeley and the General Services Administration. City Innovate is a frictionless intermediary entrusted by city and local governments to solve the most challenging urban problems. We reach solutions by driving data collaboration and facilitating open innovation amongst public, private, academic, and community sectors.

Much of Kamran's professional experience is in financial engineering around new technology ventures, including smart city initiatives. Previously he served as head of investments for a sovereign wealth fund in Abu Dhabi, UAE and as an investment banker (VP of Private Equity) for Convergence Capital in the Dubai International Financial Centre, responsible for closing transactions of interest to the general partners in Real Estate, Aviation, Mining, Water Desalination, Carbon Credits, Health, Education, Media. Kamran has a Masters Degree in International Business from Aston Business School (UK).

Harry Sheehan

Chief Deputy Water Resources Commissioner, Washtenaw County, Michigan

Harry Sheehan is the Chief Deputy Water Resources Commissioner of Washtenaw County, Michigan. He oversees the planning and implementation of storm water pollution control projects that protect our rivers, lakes, and streams. Harry previously worked with the Huron River Watershed Council, Professional Foresters, Inc., Peace Corps Nepal, and the US Forest Service. Harry has a Bachelor's Degree in Forestry from Humboldt State University, and a Master's Degree in Natural Resources from the University of Michigan.

Shashi Shekhar

Professor, University of Minnesota

Shashi Shekhar, a McKnight Distinguished University Professor at the University of Minnesota and an U.C. Berkeley alumnus, is a leading scholar of spatial computing and Geographic Information Systems (GIS). He is serving as the President of the University Consortium for GIS, a member of the Computing Research Association (CRA) board, and a co-Editor-in-Chief of Geo-Informatica journal (Springer). Earlier, he served on many National Academies' committees. Recognitions include IEEE-CS Technical Achievement Award, UCGIS Education Award, IEEE Fellow and AAAS Fellow. Contributions include algorithms for evacuation route planning and spatial pattern mining, an Encyclopedia of GIS and a Spatial Databases textbook.

PROGRAM PARTICIPANTS

Douglas A. Shoemaker

Director of Research and Outreach, Center for Applied GIScience, UNC Charlotte

Douglas A. Shoemaker is a Geospatial Analyst investigating urbanization and its impact on socio-ecological systems. He is also Director of Research and Outreach at the Center for Applied GIScience at UNC Charlotte. Co-developer of the FUTURES urbanization model, Shoemaker employs simulation and integrative modeling of "Big" data to explore spatio-temporal dynamics that link human and environmental systems.

Jacob Sipe

Executive Director, Indiana Housing and Community Development Authority (IHCDA)

Jacob Sipe, Executive Director, Indiana Housing and Community Development Authority (IHCDA).
Mr. Sipe has devoted the past eighteen years to serving the needs of families and individuals with low to moderate incomes in Indiana. In 2011 Mr. Sipe was awarded the Michael Carroll Community Economic Development Leadership Award for his dedication to the advancement of affordable housing partnerships and production. He serves on the advisory council for LISC Indianapolis and is a board member of the Community Investment Fund of Indiana, Inc., Indiana Community Finance CDE, and National Council of State Housing Agencies.

Malini Srivastava (Co-PI),

Assistant Professor, Department of Architecture and Landscape Architecture, North Dakota State University, Fargo

Malini Srivastava (Co-PI), is an Assistant Professor with the department of Architecture and Landscape Architecture at NDSU, a Certified Passive House Consultant and registered architect in the state of Minnesota. Her research expertise includes building energy modeling, hygrothermal analysis and post-construction evaluations. She is nationally recognized for her work on the design, demonstration and analysis of full-scale passive houses, a recipient of the Archibald and Edyth Bush fellowship, and spearheaded eFargo, which took first place in Georgetown University Energy Prize, a national competition for energy efficiency improvement.

Lu Su

Assistant Professor, State University of New York at Buffalo

Lu Su is an assistant professor in the department of Computer Science and Engineering at SUNY Buffalo. His research focuses on the general areas of Mobile and Crowd Sensing Systems, Internet of Things, and Cyber-Physical Systems. He obtained Ph.D. in Computer Science, and M.S. in Statistics, both from the University of Illinois at Urbana-Champaign, in 2013 and 2012, respectively. He has also worked at IBM T. J. Watson Research Center and National Center for Supercomputing Applications. He is the recipient of NSF CAREER Award, University at Buffalo Young Investigator Award, ICCPS'17 best paper award, and the ICDCS'17 best student paper award. He is a member of ACM and IEEE.

Hamed Tabkhi

Assistant Professor, University of North Carolina Charlotte

Hamed Tabkhi is the director of Transformative Computer Systems and Architecture Research (TeCSAR) Lab. His primary research is on bringing the recent advances in machine learning and data analytics to the fabric of our communities to enhance safety, security and overall wellbeing.

Ashley Thrall

Associate Professor, University of Notre Dame

Dr. Ashley P. Thrall is the Myron and Rosemary Noble Associate Professor of Structural Engineering in the Department of Civil & Environmental Engineering & Earth Sciences at the University of Notre Dame where she directs the Kinetic Structures Laboratory. Her research investigates the behavior, design, and optimization of kinetic civil infrastructure utilizing analytical, numerical, and experimental approaches. Kinetic bridges, shelters, and buildings include modular systems, which are rapidly movable, erectable, and deployable. Dr. Thrall earned her PhD and MSE in Civil & Environmental Engineering from Princeton University and her BA in Physics from Vassar College.

PROGRAM PARTICIPANTS

Venki Uddameri, Ph.D., P.E

Professor, Civil, Environmental and Construction Engineering, Director TTU Water Resources Center, Texas Tech University

Venki Uddameri is currently a professor in the department of civil, environmental and construction engineering and the director of TTU Water Resources Center at Texas Tech University. He is also the Editor-in-Chief of the Journal of American Water Resources Association. His research and teaching interests are in the areas of developing decision support systems for improving water resources resilience in rural groundwater dependent communities in arid and semi-arid regions.

Eric Walker

Director of Energy Development and Management, Erie County Department of Public Works

Eric Walker is the Director of Energy Development and Management in the Erie County Department of Public Works. He works to drive conservation and efficiency in county-owned facilities while working with an interdepartmental team to develop strategic initiatives that strengthen Erie County's sustainability leadership. His responsibilities include developing the framework to anchor infrastructure for a regional transition to renewable energy.

Previously, Eric served as the inaugural Racial Equity Fellow for the Center for Social Inclusion's Energy Democracy project, where he used his policy experience to help launch the NY Energy Democracy Alliance. He is co-founder of People United for Sustainable Housing (PUSH).

Katie Whipkey

Policy Analyst, RAND Corporation

Katie Whipkey has an M.Sc. in Public Policy and Management from Carnegie Mellon University and a B.A. in Psychology from The Ohio State University. Her research and program evaluation efforts have covered disaster mitigation and response, socio-emotional learning, teacher alternative certification, principal pipelines, education and workforce systems, sexual and family violence, geopolitical implications of migration, humanitarian response, and behavioral health. Whipkey is proficient in project management and qualitative research and analysis. Prior to joining RAND, Whipkey was the manager of events at Harvard T.H. Chan School of Public Health and also served in AmeriCorps, working with Native Alaskan youth.

Ronald D. Williams

Associate Professor, Electrical and Computer Engineering, University of Virginia

Ronald Williams is a faculty member in electrical and computer engineering at the University of Virginia. His research and teaching is in digital systems with a focus on embedded computing for control, signal processing, and machine learning applications. He is currently an associate editor for the IEEE Internet of Things Journal. He received his BS and MS degrees in electrical engineering from the University of Virginia. His PhD in electrical engineering was granted by the Massachusetts Institute of Technology.

Teresa Wu

Professor, School of Computing, Informatics, Decision Systems Engineering, Arizona State University

Dr. Wu is a professor and associate director of School of Computing, Informatics, and Decision Systems Engineering at Arizona State University. She is the director of ASU-Mayo Imaging Informatics Center and an associate professor of radiology at Mayo Clinic, College of Medicine. She received her Ph.D. in Industrial Engineering from the University of Iowa in 2001. Her current research interests include: health informatics, distributed decision support and swarm intelligence. She is currently serving as the editor-in-chief for IISE Transactions on healthcare systems engineering.

Yasin Yilmaz

Assistant Professor, Electrical Engineering Department, University of South Florida

Yasin Yilmaz received his Ph.D. degree in Electrical Engineering from Columbia University, New York, NY, in 2014. He is currently an Assistant Professor of Electrical Engineering at the University of South Florida, Tampa. He received the Collaborative Research Award from Columbia University in 2015. His research interests include statistical signal processing, machine learning, and their applications to intelligent systems, cybersecurity, IoT networks, social networks, communication systems, and cyber-physical systems.

PROGRAM PARTICIPANTS

Anil Yazici (PI)

Assistant Professor, Department of Civil Engineering, Stony Brook University, Stony Brook, NY

Dr. Yazici is an Assistant Professor at the Department of Civil Engineering, Stony Brook University, NY. Dr. Yazici's research interests include smart cities, transportation network resilience, transportation network modeling, and transportation economics. Dr. Yazici has been involved in research projects in emergency evacuation modeling, intelligent transportation systems, use of emerging technologies in transportation, and transportation safety. His current research agenda involves the resilience of interdependent networks, focusing on the role of technology and the implications on disadvantaged populations.

Kimberly Elman Zarecor, Ph.D.

Associate Professor of Architecture, Director, B.A. in Interdisciplinary Design Program, College of Design, Iowa State University

Kimberly Elman Zarecor holds a M.Arch and Ph.D. in Architecture from Columbia University. Her research in architectural history focuses on postwar Czechoslovakia and the intersection of communism and design. She is the author of Manufacturing a Socialist Modernity: Housing in Czechoslovakia, 1945-1960 (University of Pittsburgh Press, 2011). Her work has appeared in Journal of Urban History, East European Politics and Society, and Home Cultures, as well as a number of edited volumes and exhibition catalogs. She is currently researching and writing about shrinking places, both post-socialist industrial cities in the former Soviet Bloc and small rural communities in Iowa.

Qifeng Zhang (Co-PI)

Assistant Professor, Electrical and Computer Engineering department, NDSU.

Qifeng Zhang (Co-PI) is an Assistant Professor with the Electrical and Computer Engineering department at NDSU. His expertise includes specialized electric materials for energy conversion (solar cells) and storage (Lithium batteries, solid-state electrolytes).

Zhigang Zhu,

Professor, Department of Computer Science, The City College of The City University of New York

Dr. Zhigang Zhu is Herbert G. Ka yser Chair Professor of Computer Science, at The City College of New York and The CUNY Graduate Center, and Director of the City College Visual Computing Laboratory (CcvcL). His research interests include computer vision, multimodal sensing, virtual/augmented reality, and applications in assistive technology, environment, robotics, surveillance and transportation. He has published over 150 papers and his research has been supported by AFOSR, AFRL, ARO, DARPA, DHS, NSF, NY State as well as industry. He is an Associate Editor of the Machine Vision Applications Journal, Springer, and the IFAC Mechatronics Journal, Elsevier, and has been a Technical Editor of the ASME/IEEE Transactions on Mechatronics.

Daphney-Stavroula Zois

Assistant Professor, Electrical and Computer Engineering Department, University at Albany, SUNY

Daphney-Stavroula Zois received the B.S. degree in computer engineering and informatics from the University of Patras, Patras, Greece, and the M.S. and Ph.D. degrees in electrical engineering from the University of Southern California, Los Angeles, CA, USA. Previous appointments include the University of Illinois, Urbana-Champaign, IL, USA. She is an Assistant Professor in the department of Electrical and Computer Engineering, University at Albany, SUNY, Albany, NY, USA. She has received the Viterbi Dean's and Myronis Graduate fellowships. Her research is in decision making in uncertain environments, machine learning, detection and estimation theory, optimization and signal processing.

NOTES